IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) [[A]] One or more gene expression ~~cassette~~ cassettes for expression in *Eucalyptus* cells, comprising one or more genes encoding enzyme UDP-D-glucuronate carboxylase (EC: 4.1.1.35), which is cloned into a transformation binary vector and introduced into bacterium *Agrobacterium tumefaciens*, ~~wherein the cassette is for expression in *Eucalyptus* cells~~.

2-3. (Canceled).

4. (Currently Amended) The ~~cassette~~ one or more cassettes according to claim 1, wherein the enzyme is involved in the biosynthesis of hemicelluloses, cellulose and/or uronic acids.

5. (Currently Amended) The one or more cassettes ~~cassette~~ according to claim 4, wherein the hemicelluloses are xylans.

6. (Currently Amended) The ~~cassette~~ one or more cassettes according to claim 4, wherein the uronic acid is glucuronic acid.

7. (Currently Amended) A method for overexpression or repression of one or more genes encoding enzyme UDP-D-glucuronate carboxylase (EC: 4.1.1.35), in *Eucalyptus* cells comprising the steps:

(1) cloning a gene cassette comprising said one or more genes into a transformation binary vector;

(2) transforming bacterium *Agrobacterium tumefaciens* with said transformation binary vector and;

(3) introducing the bacterium *Agrobacterium tumefaciens* of step (2) into *Eucalyptus* cells.

wherein said gene cassette is incorporated into the genome of the *Eucalyptus* cells and UDP-D-glucuronate carboxylase (EC: 4.1.1.35) is overexpressed or repressed.

8. (Currently Amended) A method for genetic transformation [[in]] of *Eucalyptus* plant cells comprising the steps of:

(1) cloning a gene cassette comprising one or more genes encoding UDP-D-glucuronate carboxylase (EC: 4.1.1.35) into a transformation binary vector,

(2) transforming bacterium *Agrobacterium tumefaciens* with said transformation binary vector and;

(3) introducing the bacterium *Agrobacterium tumefaciens* of step (2) into *Eucalyptus* cells,

~~step of introducing at least one cassette according to any of claims 1, 4, 5 or 6 into the plant genome via *Agrobacterium tumefacien*~~

wherein said gene cassette is incorporated into the genome of the *Eucalyptus* cells.

9-10. (Canceled).

11. (Previously presented) The method of claim 8, further comprising the step of changing the metabolic pathway for the biosynthesis of hemicelluloses, cellulose and/or uronic acids.

12. (Cancelled).

13. (Previously Presented) A method for obtaining a genetically modified *Eucalyptus* plant comprising the steps of :

a) the genetic transformation of *Eucalyptus* plant cells according to claim 8;

b) regeneration of the cells in step a;

c) expression of the DNA introduced into the cells of step (b) in sufficient amount to substantially change the metabolic pathway for the biosynthesis of hemicelluloses and/or cellulose and/or uronic acids; and

d) obtention of the *Eucalyptus* modified plant.

14. (Cancelled).

15. (Currently Amended) A genetically modified *Eucalyptus* plant comprising the one or more expression cassettes according to claim 1, 4, 5 or 6.

16. (Currently Amended) A genetically modified *Eucalyptus* plant originating from the method according to claim 13.

17-19. (Canceled).

20. (Currently Amended) The genetically modified plant according to claim 15, wherein the genetically modified plant is used for obtaining wood and/or cellulose.

21. (Currently Amended) Derived *Eucalyptus* plants originating from the genetically modified *Eucalyptus* plant according to claim 15, wherein said derived plant comprises the one or more cassettes ~~cassette~~.

22. (Currently Amended) A genetically modified seed comprising the one or more expression cassettes according to any one of claims 1, 4, 5 or 6.

23. (Currently Amended) A genetically modified seed , wherein the seed is modified by introducing the one or more cassettes according to any one of claims 1, 4, 5 or 6 into the genome.

24. (Currently Amended) A genetically modified seed obtained from the method of claim 13, wherein the seed presents a change in the biosynthesis of cellulose, hemicelluloses and/or uronic acids.

25. (Currently Amended) The genetically modified seed of claim 22, wherein the genetically modified seed is used to generate genetically modified *Eucalyptus* plants.

26-33. (Canceled).

34. (Currently Amended) A method of modulating polypeptide level in *Eucalyptus* plants, wherein polypeptides are involved in the biosynthesis of hemicelluloses, cellulose and/or uronic acids, the method comprising the steps of:

a) introducing the one or more gene expression cassettes according to claim 1 into the *Eucalyptus* plant cell;

b) regenerating the *Eucalyptus* plant cell;

c) inducing the expression of the polypeptides during a sufficient period to modulate the level of biosynthesis of hemicelluloses, cellulose and/or uronic acids in the *Eucalyptus* plants.

35. (Currently Amended) The cassette according to claim 1, wherein the cassette is for expression in *Eucalyptus grandis* cells.

36. (Currently Amended) A genetically modified seed comprising the one or more expression cassettes according to claim 35.

37. (Currently Amended) A genetically modified seed, wherein the seed is modified by introducing the one or more cassettes according to claim 35, into the genome.

38. (Currently Amended) A method for obtaining a genetically modified *Eucalyptus* plant comprising the steps of :

a) the genetic transformation of *Eucalyptus* plant cells according to claims any one of claims 11 ~~or 12~~;

b) regeneration of the cells in step a;

c) expression of the DNA introduced into the cells of step (b) in sufficient amount to substantially change the metabolic pathway for the biosynthesis of hemicelluloses and/or cellulose and/or uronic acids; and

d) obtention of the *Eucalyptus* modified plant.

39. (Previously Presented) The genetically modified *Eucalyptus* plant according to claim 16, wherein the genetically modified *Eucalyptus* plant is used for obtaining wood and/or cellulose.

40. (Previously Presented) Derived *Eucalyptus* plants originating from the genetically modified *Eucalyptus* plant according to claim 16, wherein said derived plant comprises the cassette.

41. (New) A method of modulating the biosynthesis of hemicellulose and/or uronic acid levels in *Eucalyptus* plants comprising the steps of:

(1) cloning a gene cassette comprising one or more genes encoding at least one enzyme from the group consisting of:

myo-inositol 1-phosphate synthase (EC: 5.5.1.4), myo-inositol monophosphatase (EC: 3.1.3.25), myo-inositol oxygenase (EC: 1.13.99.1), β-glucuronidase (EC: 3.2.1.31), glucuronokinase (EC: 2.7.1.43), glucuronosyltransferase (EC: 2.4.1.17), glucuronate-1-phosphate uridyltransferase (EC: 2.7.7.44), phosphoglucomutase (EC: 5.4.2.2), UDP-glucose pyrophosphorylase (EC: 2.7.7.9), UDP-glucose dehydrogenase (EC: 1.1.1.22), UDP-D-glucuronate carboxylase (EC: 4.1.1.35), 1,4-β-D-xylan synthase (EC: 2.4.2.24), and cellulose synthase (EC: 2.4.1.1) into a transformation binary vector;

(2) transforming bacterium *Agrobacterium tumefaciens* with said transformation binary vector and;

(3) introducing the bacterium *Agrobacterium tumefaciens* of step (2) into *Eucalyptus* cells,

wherein said gene cassette is incorporated into the genome of the *Eucalyptus* plants.